## What is claimed is:

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	1.	Α	CRC	calculation	method	for	а	message,
comprising the steps of:								

- defining a generator matrix having a maximum value of
  the non-zero entries for representing an LFSR
  corresponding to a form for linearly mapping an
  input vector to a remainder vector;
  - transforming the generator matrix to a similar matrix for reducing the maximum value of the non-zero entries;
    - arranging the message inputted in the form to the input vector; and
  - transforming the message to a CRC result by multiplying the similar matrix to the input vector.
  - 2. A method according to claim 1, wherein the form is a byte-wise form.
- 3. A method according to claim 1, wherein the form is a doubleword-wise form.
  - 4. A method according to claim 3, wherein the step of arranging the message to the input vector comprises padding the message with one or more dummies.

- 5. A method according to claim 3, further comprising initiating the LFSR with a specific value.
- 6. A method according to claim 5, further comprising identify a length type of the message and determining the specific value in accordance with the length type.
- 7. A method according to claim 3, further comprising comparing the CRC result with a specific pattern.

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- 8. A method according to claim 7, further comprising identify a length type of the message and determining the specific pattern in accordance with the length type.
- 9. A method according to claim 1, wherein the step of transforming the message to a CRC result comprises performing an iteration procedure between the remainder vector and the input vector.
- 10. A method according to claim 1, wherein the step of transforming the generator matrix to a similar matrix comprises the steps of:

selecting an invertible matrix;

generating an inverse matrix of the invertible matrix;

and

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multiplying the invertible matrix, generator matrix and inverse matrix.

- 11. A method according to claim 10, further comprising inserting a flip-flop procedure between the multiplying of the invertible matrix and generator matrix for forming a pipeline architecture.
- 12. A CRC calculation system for generating a CRC result from a message, comprising:
  - means for arranging the message inputted in a form to an input vector;
  - a generator matrix having a maximum value of the non-zero entries for representing an LFSR corresponding to the form for linearly mapping the input vector to a remainder vector; and
  - means for transforming the generator matrix to a similar matrix for reducing the maximum value of the non-zero entries; and
  - means for multiplying the similar matrix to the input vector.
- 13. A system according to claim 12, wherein the form25 is a byte-wise form.

- 14. A system according to claim 12, wherein the form is a doubleword-wise form.
- 5 15. A system according to claim 14, further comprising one or more dummies for padding the message thereto.
- 16. A system according to claim 14, further comprising a specific value for initiating the LFSR therewith.

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- 17. A system according to claim 16, further comprising means for identifying a length type of the message and determining the specific value in accordance with the length type.
- 18. A system according to claim 14, further comprising means for comparing the CRC result with a specific pattern.
- 19. A system according to claim 18, further comprising means for identifying a length type of the message and determining the specific pattern in accordance with the length type.
- 25 20. A system according to claim 12, wherein the

means for transforming the generator matrix to a similar matrix comprises means for multiplying the generator matrix to an invertible matrix.

- 21. A system according to claim 20, wherein the means for transforming the generator matrix to a similar matrix comprises means for multiplying an inverse matrix of the invertible matrix to the generator matrix.
- 22. A system according to claim 12, further comprising means for forming a pipeline architecture between the message and CRC result.